

ART + SCIENCE AT HOME

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MAPPING a SOUNDSCAPE



(Hara Woltz, painting detail, 2018)

It's fun to look for birds, but when they're hidden in trees they can be difficult to find. Experienced birders also listen for birds and use their vocal patterns to locate and identify individuals. When we work on field notations, we often focus on what we see, but using your sense of hearing is another great way to observe and record the world around you. With that in mind, we're going to map the sounds we hear, which will help you notice and tune in to the birds around you that are hidden from view. Biologists call this map a "soundscape," which means a record of everything that you hear. These sounds can be broken down into categories and types that we can record. Some people distinguish sounds based on the origin of what is making the sound:

Biological: Anything related to living organisms other than humans. Examples include sounds such as a Northern Cardinal singing, a bee buzzing, a dog barking, a squirrel scurrying up a tree.

Geophysical: Anything of the geologic or physical world not made by humans. Examples include the sound of wind, the sound of water moving in a stream, the sound of waves at the beach.

Anthropological

Sounds that are related to humans. Examples include sounds such as a car driving by, a window being opened, a lawn mower, a radio, or television.

STEP ONE: Gather your materials and head outside.

- Your field notebook
- Pen or pencil
- Colored pencils or markers

STEP TWO: Pick your spot!

- Find a good spot for sitting. You want to be comfortable enough that you could stay in this place for 15-20 minutes.
- Find a good spot for sitting. You want to be comfortable enough that you could stay in this place for 15-20 minutes. Try to pick a place where you will be able to hear birds, but if you can't this exercise will still help you in future birding endeavors.

STEP THREE: Initial sound assessment.

- Sit down and get comfortable.
- Close your eyes and take some deep breaths.
- Let yourself start to focus on sounds without the distraction of looking around. Try to sit still like this, hearing and breathing for a little while. If you have a timer, you could set it for two minutes and count how many different sounds you hear.
- Some questions to ask yourself:
 - What do you hear first?

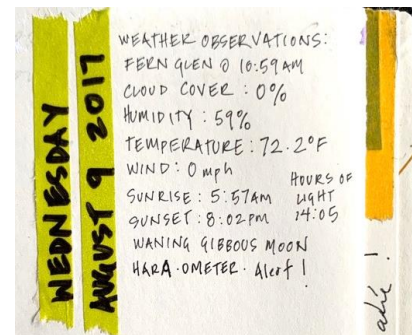
- What's the loudest thing you hear?
- What's the softest or quietest thing you hear?
- Do the sounds repeat themselves?
- Which sounds seem to be close to or far from you?

STEP FOUR: Open your field notebook.

- Make a decision about your layout. You can choose to make your soundmap on a single page, or across two pages.

STEP FIVE: Record some data about the environment.

- Your location, the weather, the time of year, and the time of day can have a big impact on what you observe. Scientists and artists often begin their observations by writing these things down. Many birds are the most active early in the morning. Wind, temperature, and precipitation can have a big impact on how plants and animals act.
- Pick a corner of your journal page and make some notes that include:
- Location, Date, Time: Where and when are you making these observations?
- Weather: Include general information about the temperature, the cloud situation, whether it is sunny, rainy, or snowy, and how windy it feels. You might also want to include a note about your internal barometer. How are you feeling today?



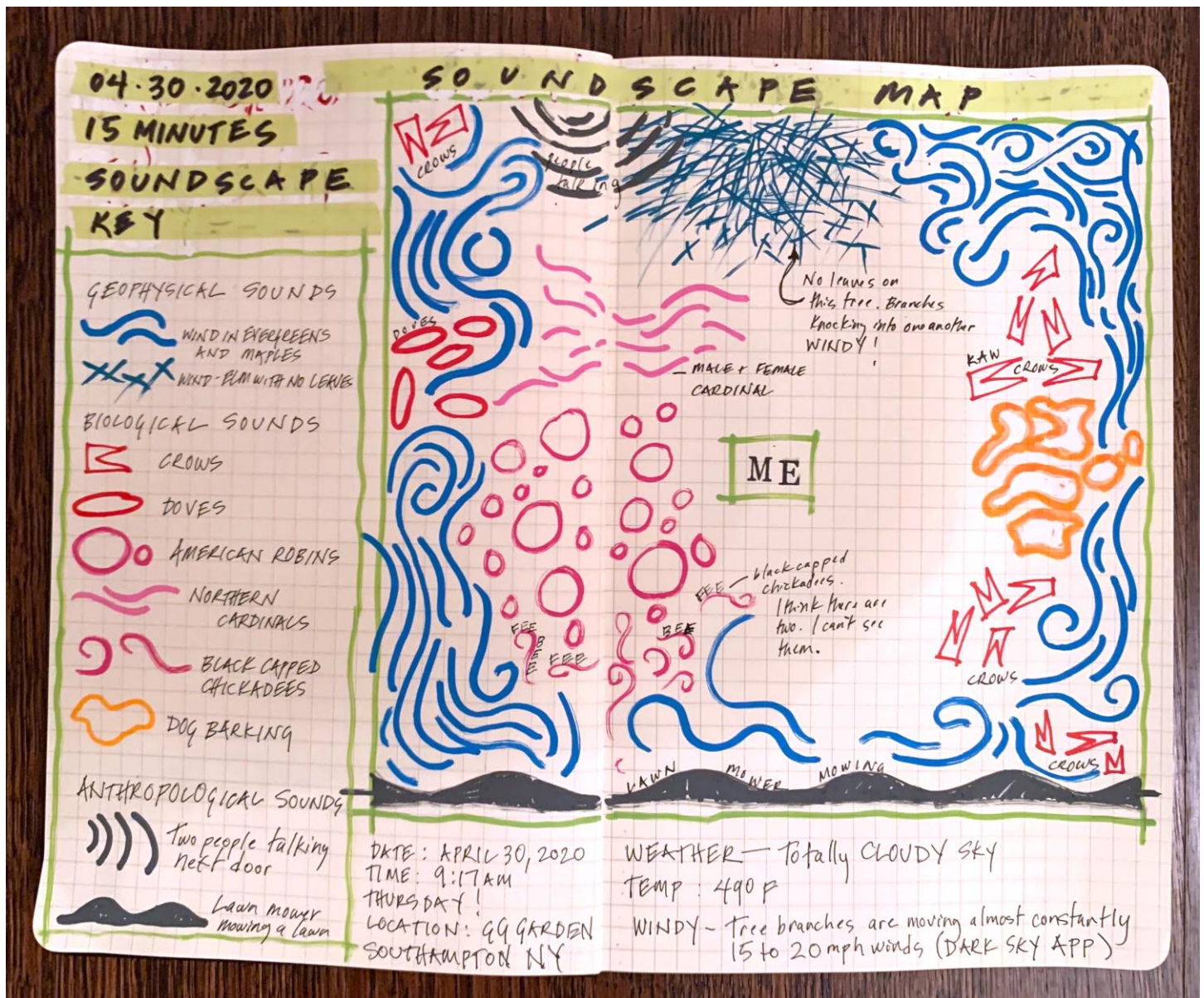
STEP SIX: Draw yourself.

- Draw a symbol of yourself in the middle of the page.
- You will hear things in front, in back, and to the sides of you and you will want to leave enough space record where you think the sounds are coming from.

STEP SEVEN: Draw in the sounds.

- Begin by drawing the most distant sounds. Place your marks about those sounds at the edges of the paper.
- Create a key, or a language of pictures, that lets you know what the sound is. Be creative and use different colors for different sounds.
- Add words, symbols, diagrams, numbers, colors. Describe sounds with words (clicky, buzzy, whistly, rolling, piercing, fluffy, strong). Describe sounds with lines. Invent and label the symbols that you use
- Depending on how many colors you have to work with, you might choose to do something like use different greens for all your biological sounds, different purples for all your geophysical sounds, and different reds and oranges for all your anthropological sounds. Or, do something totally different. There is no right answer.
- Add sounds by working your way in from the edges of the page. If you hear something new in the distance that you didn't catch before, add that in. Remember that this is a process; the longer you spend listening, the more that you will notice.
- Invent and label the symbols that you use. As you listen, you will probably find that some sounds are high, and some are low. Some are consistent, some are repeated and some only happen once. Some start in one place and move to another.
- After you work on your sound map 15 to 20 minutes, you will probably have a terrific record of what you heard, a sound picture of a part of a day in your backyard. It's fun to repeat this process at different times of day, and on different days and then compare your maps.

EXAMPLE SOUNDSCAPE MAP



STEP EIGHT: Round out and review.

- When you are finished, ask yourself these questions and make some notes:
 - What sounds stood out the most?
 - How many different sounds did you hear?
 - What sounds were the most confusing?
 - What sounds were constant?
 - What sounds were the least frequent?
 - Were there any patterns?
 - Was there anything surprising?
- If you are lucky enough to see the bird that is making a sound, try to draw it.

Later you can use online resources such as: [The Cornell Lab of Ornithology](#), [iNaturalist](#) or [eBird](#) to help you figure out the bird species that you heard. Cornell's online [Macaulay Library](#) has photos, videos, and songs from thousands of birds that you can listen to online for free. [Song Sleuth](#) and [Chirp](#) are apps that record and bird song and suggest possible species matches.



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